

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A network authentication apparatus comprising:
a network interface unit connected with a network and
~~transmitting/receiving~~that transmits/receives a packet;
a packet relay unit ~~for relaying~~that relays a received packet in accordance with a destination address of the received packet; and
a filtering processing unit ~~for judging~~that determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with:
one or more of a destination MAC address, (Media Access Control) address and a destination IPv6 address, (Internet Protocol version 6) address and a source MAC address, source IPv6 address; and
a source IPv6 interface ID ID, contained in the received packet.
2. (currently amended): The network authentication apparatus as claimed in claim 1,
wherein the filtering processing unit ~~judges~~determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with
with:
at least one of the destination MAC address, ~~and, source~~and the destination IPv6 address; ~~and~~-or
the source IPv6 interface ID.

3. (currently amended): The network authentication apparatus as claimed in claim 1,

wherein the filtering processing unit further comprises:

a filtering information storage unit ~~for storing~~ that stores at least ~~a one of the~~ destination MAC address ~~, and, source MAC address or source~~ and the destination IPv6 address, ~~that stores the~~ or source IPv6 interface ID, ~~and, and that stores~~ judgment information representing whether to relay or discard, in association with each other; and

a processing unit ~~for comparing~~ that compares:

(a) one of the destination MAC address and ~~source MAC address or source~~ the destination IPv6 address, ~~and or (b) the~~ source IPv6 interface ID contained in the received packet with (a) one of the destination MAC address and ~~source MAC~~ address ~~or source~~ the destination IPv6 address ~~or, and (b) the~~ source IPv6 interface ID stored in the filtering information storage unit, and

wherein when the addresses and IDs match with each other, judging determining whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with (a) the destination MAC address or the destination IPv6 address and (b) the source IPv6 interface ID ~~each address~~.

4. (currently amended): The network authentication apparatus as claimed in claim 1,

wherein the filtering processing unit comprises:

a MAC filtering unit ~~for judging that determines~~ whether to relay the received packet to the packet relay unit or discard the packet in accordance with the destination MAC address ~~or~~ and the source MAC address contained in the received packet; and

an IP filtering unit ~~for judging that determines~~ whether to relay the received packet to the packet relay unit or discard the packet in accordance with ~~the source IPv6 address or~~ the destination MAC address and the source IPv6 interface ID contained in the received packet.

5. (currently amended): The network authentication apparatus as claimed in claim 4,

wherein the filtering processing unit further comprises:

a filtering information storage unit ~~for storing that stores at least a the~~ destination MAC address ~~, and, and the~~ source MAC address ~~or source IPv6 address~~ or source the source IPv6 interface ID ~~, and, and the~~ judgment information representing whether to relay or discard, in association with each other.

6. (currently amended): The network authentication apparatus as claimed in claim 4,

wherein the MAC filtering unit further comprises:

a MAC filtering information storage unit ~~for storing at that stores the~~ destination MAC address and ~~source the source~~ MAC address and judgment the judgment information representing whether to relay or discard, in association with each other; and

wherein the IP filtering unit further comprises:

an IP filtering information storage unit ~~for storing a destination~~ that stores the destination MAC address, ~~and, source IPv6 address or~~ and the source IPv6 interface ID, and, and the judgment information representing whether to relay or discard, in association with each other.

7. (currently amended): The network authentication apparatus as claimed in claim 6,

wherein the MAC filtering unit compares the destination MAC address ~~or and~~ the source MAC address contained in the received packet with the destination MAC address ~~or and the~~ source MAC address stored in the MAC filtering information storage unit, and when the addresses match with each other, ~~judging~~ determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the destination MAC address ~~or and the~~ source MAC address; ~~and, and~~

wherein the IP filtering unit compares the destination MAC address and the ~~the source IPv6 address or~~ source IPv6 interface ID contained in the received packet with the destination MAC address and the ~~the source IPv6 address or~~ source IPv6 interface ID stored in the IP filtering information storage unit, and when the addresses ~~or and~~ interface IDs match with each other, ~~judging~~ determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the destination MAC address and the ~~the source IPv6 address or~~ source IPv6 interface ID.

8. (currently amended): The network authentication apparatus as claimed in claim 1, further comprising:

an authentication unit ~~for receiving that~~ receives an authentication request from an arbitrary information terminal device connected to the network interface unit via a network and executing authentication based ~~on the basis of~~ predetermined information related to the arbitrary information terminal device.

9. (currently amended): The network authentication apparatus as claimed in claim 8,

wherein the authentication unit ~~has~~ comprises an authentication information storage unit ~~for storing that stores a~~ user ID, password, and, and IPv6 interface ID or MAC address, ~~in-associated~~ association with each other, and performs authentication by comparing a ~~a~~ user ID, password, ~~and, and~~ and IPv6 interface ID or MAC address received from the arbitrary information terminal device with the user ID, password, ~~and, and~~ and IPv6 interface ID or MAC address stored in the authentication information storage unit.

10. (currently amended): The network authentication apparatus as claimed in claim 1, further comprising:

a security control unit ~~for generating that generates or exchanging exchanges~~ a key for packet encryption or decoding for each communication counterpart, using a key exchange protocol; and

a security processing unit ~~for executing that executes~~ authentication of at least the received packet, using the key generated by the security control unit.

11. (currently amended): A network authentication system comprising:

an authentication server ~~for receiving~~ that receives an authentication request from an arbitrary information terminal device connected via a network and executing authentication based on the basis of predetermined information related to the arbitrary information terminal device; and

a network node device connected to the network and ~~relaying~~ that relays a packet received from the ~~network;~~ network,

wherein the network node device ~~having;~~ comprises:

a network interface unit connected with the network and ~~transmitting/receiving~~ that transmits/receives a packet;

a packet relay unit ~~for relaying~~ that relays a received packet in accordance with a destination address of the received packet; and

a filtering processing unit ~~for judging~~ that determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with: ~~two~~

one or more of a destination MAC ~~address,~~ (Media Access Control) address ~~and a destination IPv6 address,~~ (Internet Protocol version 6) address ~~and a source MAC address,~~ source IPv6 address; and

a source IPv6 interface ID ~~ID,~~ contained in the received packet; ~~and,~~ and

wherein the filtering processing unit relays only a packet addressed to the authentication server to the packet relay unit, of packets sent from an arbitrary information terminal device that is not authenticated by the authentication server.

12. (currently amended): The network authentication system as claimed in claim 11,

wherein the filtering processing unit of the network node device further comprises:

a filtering information storage unit ~~for storing~~ that stores at least ~~a one of the~~ destination MAC address and the destination IPv6 address, ~~that stores the~~, ~~and,~~ ~~source MAC address or source IPv6 address or source IPv6 interface ID~~, ~~and,~~ and that stores judgment information representing whether to relay or discard in association with each other; and

a processing unit ~~for comparing~~ that compares:

(a) one of the destination MAC address, ~~and, source MAC address or source IPv6 address or~~ and the destination IPv6 address and (b) the source IPv6 interface ID contained in the received packet with (a) one of the destination MAC address, ~~and, source MAC address or source IPv6 address or~~ and the destination IPv6 address and (b) the source IPv6 interface ID stored in the filtering information storage unit, and

wherein when the addresses and IDs match with each other, judging determining whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with each address (a) the destination MAC address or the destination IPv6 address and (b) the source IPv6 interface ID.

13. (currently amended): The network authentication system as claimed in claim 12,

wherein the authentication server includes an instruction issuing unit ~~for that~~
~~adds an instruction addition of information of~~ the arbitrary information terminal device
when the arbitrary information terminal device is ~~authenticated;~~authenticated.

wherein the network node device includes a change unit ~~for that~~ newly
~~registering registers~~ the ~~MAC address or IPv6 address or~~ IPv6 interface ID of the
arbitrary information terminal device as ~~the source MAC address or the source IPv6~~
~~address or~~ the source IPv6 interface ID into the filtering information storage unit
together with the judgment information representing relay in accordance with an
instruction from the authentication server; ~~and,~~ and

wherein the filtering processing unit relays a packet sent from the arbitrary
information terminal device authenticated by the authentication server, to the packet
relay unit.

14. (currently amended): The network authentication system as claimed in
claim 11,

wherein the filtering processing unit of the network node device further
comprises:

a MAC filtering unit ~~for judging that determines~~ whether to relay the received
packet to the packet relay unit or discard the packet in accordance with the
destination MAC address ~~or~~ and the source MAC address contained in the received
packet; and

an IP filtering unit ~~for judging that determines~~ whether to relay the received
packet to the packet relay unit or discard the packet in accordance with ~~the source~~

~~IPv6 address or~~ the destination MAC address and the source IPv6 interface ID
contained in the received packet.

15. (currently amended): The network authentication system as claimed in claim 14,

wherein the filtering processing unit of the network node device further comprises:

a filtering information storage unit ~~for storing~~ that stores at least a the destination MAC address, address and the source MAC address, source IPv6 address or the source IPv6 interface ID ~~in association with~~ and judgment information representing relay or ~~discard~~ discard in association with each other.

wherein the MAC filtering unit compares the destination MAC address ~~or~~ and the source MAC address contained in the received packet with the destination MAC address ~~or~~ and the source MAC address stored in the filtering information storage unit, and when the addresses match with each other, ~~judging~~ determines whether to relay the received packet to the packet relay unit or discard the packet in accordance with the judgment information associated with the destination MAC address ~~or~~ and the source MAC address, and

wherein the IP filtering unit compares the ~~source IPv6 address or~~ destination MAC address and the source IPv6 interface ID contained in the received packet with the ~~source IPv6 address or~~ destination MAC address and the source IPv6 interface ID stored in the filtering information storage unit, and

wherein when the addresses ~~or~~ and interface IDs match with each other, ~~judging~~ determines whether to relay the received packet to the packet relay unit or

discard the packet in accordance with the judgment information associated with the ~~source IPv6 address or~~ destination MAC address and the source IPv6 interface ID.

16. (currently amended): A switch apparatus comprising:
plural network interface units connected with a network and
transmitting/receiving packets;

a packet switch unit ~~for relaying that relays~~ a received packet between the
plural network interface units in accordance with a destination address of the
received packet; and

a filtering processing unit ~~for judging that determines~~ whether to relay ~~a the~~
received packet to the packet switch unit or discard the packet in accordance with:
two

one or more of a destination MAC ~~address,~~ address and a destination IPv6
~~address,~~ address and a source MAC address, ~~source IPv6 address and;~~ and
a source IPv6 interface ID ID, contained in the received packet.